

CLAIMS

Kindly amend claims 23, 31, 37 and 38 as follows:

1. (canceled)
2. (canceled)
3. (canceled)
4. (canceled)
5. (canceled)
6. (canceled)
7. (canceled)
8. (canceled)
9. (canceled)
10. (canceled)
11. (canceled)
12. (canceled)
13. (canceled)
14. (canceled)

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cmt

1 ~~15~~. (original) A system for providing input from a keypad and providing lighting to said keypad over an electrical connection comprising:

key detection means for providing a signal over said electrical connection indicative of a key pressed on said keypad;

lighting means for lighting said keypad via said electrical connection; and

multiplexing means for selectively activating said lighting means and said key detection means at a predetermined rate.

2 ~~16~~. (original) The system of Claim ~~15~~ wherein said predetermined rate is a rate sufficient to make said lighting means and said keypad detection means appear to be activated simultaneously by said multiplexing means to a user of said keypad.

3 ~~17~~. (original) The system of Claim ~~15~~ further including timer means for establishing said predetermined rate.

4 ~~18~~. (original) The system of Claim ~~17~~ wherein said timer means includes a computer connected to said keypad via a first connection.

5 ~~19~~. (original) The system of Claim ~~18~~ wherein said first connection includes a pin contact.

6 ~~20~~. (original) The system of Claim ~~19~~ wherein said keypad is a keypad on a cellular telephone.

7 ~~21~~. (original) The system of Claim ~~20~~ wherein said cellular telephone is incorporated into a personal digital assistant.

8 ~~22~~. (original) The system of Claim ~~21~~ wherein said keypad is located on an exterior portion of a flip of said personal digital assistant.

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23. (currently amended) A system for providing bi-directional information over a single connection between a keypad and a signal processing circuit comprising:

first means for selectively providing a high voltage state or a low voltage state on said single connection at a predetermined rate;

second means for transferring a first signal from said [computer] signal processing circuit to said keypad over said connection in response to said high voltage state on said connection; and

third means for transferring a second signal from said keypad to said signal processing circuit over said connection in response to said low voltage state on said connection.

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24. (original) The system of Claim 9 wherein said first means includes a timer connected to a switch that is selectively activated at said predetermined rate by said timer, said switch for selectively bypassing a pull-up resistor to a high voltage source to provide said high voltage state at one end of said pull-up resistor when said pull-up resistor is bypassed and to provide said low voltage state at said one end of said pull-up resistor when said pull-up resistor is not bypassed, said one end of said pull-up resistor connected to said connection.

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25. (original) The system of Claim 9 wherein said first signal is a keypad lighting signal.

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26. (original) The system of Claim 11 wherein said second means includes one or more light emitting diodes arranged in a lighting circuit connected to said single connection, said one or more light emitting diodes activated via said high voltage state on said connection.

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27. (original) The system of Claim 9 wherein said second signal is a voltage representative of a specific key pressed on said keypad.

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28. (original) The system of Claim 13 wherein said third means includes a resistive ladder connected to said single connection for providing said voltage on said single connection when said single connection is at said low voltage state.

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29. (original) The system of Claim 27 wherein said circuit includes an analog-to-digital converter for converting said voltage to a digital signal.

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30. (original) The system of Claim 29 wherein said circuit further includes a computer that runs software for reading said digital signal.

17
31. (currently amended) A mobile communications device including an integrated personal digital assistant and cellular telephone comprising:

first means for receiving and transmitting communications signals;

second means for processing said communications signals, for receiving an input signal, and for providing an output signal;

third means for providing said input signal in response to a user-input;

fourth means for connecting said third means to said second means;

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fifth means for providing a [first function] lighting function and a [second] keypad reading function between said second means and said third means via said fourth means so that said [[first]] lighting function and said [second] keypad reading function appear to a user to be implemented simultaneously.

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32. (original) The mobile communications device of Claim 31 wherein said fourth means includes a pin contact between said second means and said third means.

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33. (original) The mobile communications device of Claim 31 wherein said third means includes a keypad on a flip.

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34. (original) The mobile communications device of Claim 33 wherein said keypad is on an exterior portion of said flip.

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35. (original) The mobile communications device of Claim 34 further including a body for housing said second means.

22/ 36. (original) The mobile communications device of Claim 25 wherein said fourth means includes a hinge for physically connecting said flip to said body.

23/ 37. (currently amended) The mobile communications device of Claim 20 wherein said [first function is a] lighting function [for providing] provides backlighting to said keypad.

24/ 38. (currently amended) The mobile communications device of Claim 20 wherein said [second function is a] keypad reading function [for enabling] enables said second means to read user-input from said keypad.

C/ Cont
25/ 39. (original) A personal digital assistant comprising:
a keypad mounted on a flip for providing a first input signal;
a body having a computer for processing said first input signal and providing an output signal in response thereto;
a hinge connecting said flip to said body;
a pin contact between said flip and said body for providing an electrical connection between said flip and said body when said flip is closed; and
multiplexing circuit for selectively providing said first input signal from said keypad to said body and providing a second signal from said body to said keypad via said electrical connection.

26/ 40. (original) The personal digital assistant of Claim 25 wherein said hinge is positioned with respect to said flip and said body so that said keypad is exposed when said flip is closed.

27/ 41. (original) The personal digital assistant of Claim 25 wherein said personal digital assistant includes a cellular telephone.

28/ 42. (original) The personal digital assistant of Claim 25 wherein said body includes a display mounted on an exterior of said body for displaying said output signal.

²⁹43. (original) The personal digital assistant of Claim ²⁵39 wherein said second signal is a power signal for providing a lighting function to said keypad.

³⁰44. (original) The personal digital assistant of Claim ²⁵39 further including means for reading said first input signal.

³¹45. (original) The personal digital assistant of Claim ³⁰44 wherein said means for reading said first input signal includes an analog-to-digital converter for digitizing said first input signal.

³²46. (original) The personal digital assistant of Claim ³¹45 wherein said computer runs software for reading said digitized first input signal.

³³47. (original) The personal digital assistant of Claim ³²46 wherein said multiplexing circuit includes means for multiplexing said first input signal and said second signal on said pin contact at a rate sufficient to provide lighting to said keypad while enabling said computer to read said first input signal.

³⁴48. (original) The personal digital assistant of Claim ³³47 wherein said rate is approximately greater than 30Hz.

³⁵49. (original) The personal digital assistant of Claim ³³47 wherein said means for multiplexing includes a timer for establishing said rate.

³⁶50. (original) The personal digital assistant of Claim ³⁵49 wherein an output of said timer is connected to a bypassing circuit for selectively bypassing a pull-up resistor to a high voltage in response to said output of said timer, thereby selectively providing a low voltage state or a high voltage state at an output of said bypassing circuit at said rate, said output of said bypassing circuit connected to said pin contact on said body.

37/ 51. (original) The personal digital assistant of Claim 49³⁵ wherein said keypad includes a resistive ladder for providing a key-identifying voltage indicative of said first user-input signal in response to said pressing of a key by a user.

38/ 52. (original) The personal digital assistant of Claim 51^{37/} wherein an output of said resistive ladder is connected to said pin contact on said flip, thereby providing said voltage indicative of said first user-input at said pin contact.

39/ 53. (original) The personal digital assistant of Claim 51³⁷ wherein said software includes means for reading said key-identifying voltage when said output of said bypassing circuit is at said low voltage state.

could 40/ 54. (original) The personal digital assistant of Claim 49³⁵ wherein said keypad includes a lighting circuit connected to said pin contact that is activated when said output of said bypassing circuit is at said high voltage state and de-activated when said output of said bypassing circuit is at said low voltage state.

41/ 55. (original) The personal digital assistant of Claim 54⁴⁰ wherein said lighting circuit includes one or more light emitting diodes.

42/ 56. (original) A method for providing input from a keypad and providing lighting to said keypad over an electrical connection comprising the steps of:
providing a signal over said electrical connection indicative of a key pressed on said keypad;
lighting said keypad via said electrical connection; and
selectively activating and/or de-activating said step of lighting and said step of providing at a predetermined rate.